Response to Comments East Mill Creek Environmental Assessment Project #57801
Submitted by LeeAnn Bennett received May 14, 2020

Statement: I would support the No Herbicide Alternative for this project.
Response: Preference noted

Question1: What is a Wildlife Opening and right-of-way? Why do they lime the soil?

Response:
We would create and treat existing wildlife openings and right of ways with a mixture of herbicides or manual methods in order to control non-native invasive plants and woody encroachment (see non-native invasive treatment above). Once herbicide treatments are complete, we would disk, fertilize, lime, and seed existing openings with native grasses/plants to provide enhanced foraging opportunities for wildlife.

- A wildlife opening is an area that is maintained in an early seral stage primarily for pollinators and a large array of other insects, neotropical migrant birds, birds that require shrubby or open habitats, and for those animals that require browse. These areas are usually about 2 acres in size. The advantage to openings is the open habitat is gained as well as the edge habitat of forest adjacent to openness. Currently there is a lack of high-quality forage habitat for species requiring early successional habitat within the project area. (Revised Forest Plan, WF001)**.** There are approximately 0 acres of early seral stage habitat (0-10 year age class) in the pine forest type. There are currently 5 acres of permanent wildlife openings that occur within the project area.
- In a wildlife opening, the area will be disked, limed and fertilized to improve the soil so as there is more success with germination of native grass seed. Liming will provide a more balanced soil pH and along with fertilization, plant growth of native grasses will be improved. The area will be brush hogged to maintain early seral stages.
- Our goal is to provide at least 351 acres (6% of the suitable acres) of early seral (grass-forb or shrub-seedling) conditions.
- Wildlife openings and ponds play an important role also in the foraging ecology of woodland bat species. The uncluttered flying space provided by openings allows bats to freely maneuver, find and catch insect prey and expend less energy than they normally would in a more heavily forested habitat.
- The purpose of this action is to restore the health and vigor of the East Mill Creek area. Implementing these activities would provide for a diversity of plant and animal communities throughout the East Mill Creek area, provide early seral habitat in a well-distributed grass/forb or shrub/seedling stage, reduce fuel accumulation, and produce a sustainable yield of wood products.
- Current conditions in the East Mill Creek area do not meet the desired conditions for the forest Management Areas (MA's) and the ecological systems that occur within.

Question 2: Why don't foresters plant trees in a more thinned out manner instead of going back in and thinning trees later? Wouldn't it save on costs if some (not all) parts of the forest were planted more thinly and then left alone?

Response:

"Ideal plantation density is a personal decision based on your management objectives as well any requirements associated with a cost share program. But for most plantations, density should average 400 to 700 live seedlings per acre (Table 1). If seedling count is low, you need to re-evaluate the site and decide whether to re-establish the plantation….Too many seedlings can also be a problem, especially along plantation edges near mature pines. Seedling counts over 1000 per acre indicate a need for a pre-commercial thin." ["Measuring Survival and Planting Quality in New Pine Plantations," Londo, Andrew J. Dr. and Dr. Stephen G. Dicke; Department of Forestry, Mississippi State University]

"Most forest plantings in Arkansas have from 400 to 700 trees per acre. Between 400 and 500 well-planted seedlings is usually adequate." ["Storing, Handling and Planting Southern Pine Seedlings," Barr, Jon E., Ph.D. Assistant Professor - Forestry; University of Arkansas, Division of Agriculture, FSA5007-PD-8-10RV.]

"The spacing at which seedlings are planted should vary with the owner's objective and expected survival. Bennett (1962) showed that at ages 20 to 35 the cubic yield of 200 trees per acre for unthinned stands of many conifers is better than half the yield from 1000, and the yield from 600 trees is 90 to 98 percent of the 1000-tree yield." ["Silviculture of Shortleaf Pine" Walker, Laurence C. and Harry V. Wiant, Jr., Stephen F. Austin State College School of Forestry, Nacogdoches, Texas, Bulletin No. 9, April 1966.]

"The relationship between seedling planting spacing and stocking levels in the established stand is heavily dependent on seedling quality. If seedling survival can be predicted to be high, the number of seedlings planted per acre can be reduced to the point where precommercial thinning is not necessary….Current planting spacing varies from 8 X 8 ft. to 10 X 10 ft. (681 and 436 seedlings per acre, respectively), depending largely on the confidence the forester has in attaining high survival." ["Artificial Regeneration of Shortleaf Pine," Barnett, James P., John C. Brissette, and William C. Carlson, Proceeding of Symposium of the Shortleaf Pine Ecosystem, Little Rock, Arkansas, March 31 - April 2, 1986.]

All publications, suggest a planting density of about 600 trees per acre, which is right at the density in which we plant. The reason for our choosing a higher density, again, is based on the fact that we're trying to reestablish the shortleaf pine to this ecosystem, and, therefore, we want high survival.

Secondly, if we were to go with a lesser density (e.g. a greater spacing), we would run the risk of the pine seedlings being overtopped by woody vegetation, which, would require a release operation in which we'd have to remove the woody vegetation competition.

“Shortleaf pine is a shade-intolerant species and does not survive or grow well when suppressed (16). Young shortleaf pines are generally slower growing and slower to dominate a site than loblolly pine or many hardwood competitors, but they usually will endure competition longer than its common associate, loblolly pine. Shortleaf pine can maintain dominance on most sites after it overtops competing vegetation, but in general hardwoods cannot be eliminated from pine sites (7,9,10). On very good sites, however, it may not outgrow competing species such as sweetgum and red maple. Control of both woody and non-woody competition usually results in economic gains (15,35).” [“Shortleaf Pine,” Lawson, Edwin R., “Volume 1: Conifers - USDA Forest Service Southern Research Station, Agriculture Handbook 654, December 1990.]